IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant: Wayne Edward Beimesch	Confirmation No.: 6754
Serial No. 09/806,274	Examiner: David A. Rogers
Filed: March 27, 2001	Group Art Unit: 2856
For: METHOD FOR MEASURING VOLATILE ORGANIC COMPOUNDS AND A KIT FOR SAME	Attorney Docket No.: 390780

December 27, 2007

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Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22313-1450

SUBSTITUE APPEAL BRIEF AND REPLY BRIEF TO EXAMINER'S ANSWER

Sir:

This Reply Brief is being submitted in response to the Examiner's Answer issued on November 1, 2007 and also as a substitute for the Appeal Brief submitted on July 23, 2007 in accordance with 37 C.F.R. §41.41. Please substitute the older version of the Appeal Brief filed on July 23, 2007 with this file. This Reply Brief is timely filed within 2 months of the mailing of the Examiner's Answer.

In accordance with 37 C.F.R. §41.37, and fully responsive to the Office Action of November 16, 2006, Appellant files this Appeal Brief in support of the Appeal in the above-identified matter (hereinafter the '274 Application). A Notice of Appeal, with the appropriate fee of $500 as required by 37 C.F.R. §§41.31, 41.20(b)(1), was filed on February 16, 2007. An Appeal Brief, along with the $500 fee as required by 37 C.F.R. §41.20(b)(2), was filed on May 16, 2007. A corrected version of the Appeal Brief was filed on July 23, 2007 in response to the Notification of Non-compliant Appeal Brief mailed June 22, 2007. This Brief is being filed as a Reply Brief and also as a substitute Appeal Brief, and it is timely filed within 2 months of the mailing of the Examiner's Answer.

(1) Real party in interest.

The real party in interest for this appeal is Midwest Research Institute. Evidence of this assignment, which was recorded on March 27, 2001, may be found at reel/frame 012337/0269.

(2) Related appeals and interferences.

No other pending appeals or interferences are currently known to Appellant that will directly affect, be directly affected by, or have a bearing on the decision to be rendered by the Board of Patent Appeals and Interferences in the instant appeal. One previous decision and one previous order in this matter rendered by the Board of Patent Appeals and Interferences dated March 19, 2004 and June 12, 2006, respectively, are attached as an Appendix.

(3) Status of claims.

Claim 1-7 were rejected in the last Office Action and are at issue in this appeal. Claims 8-10 have been previously cancelled. Claims 1-7 are currently pending in the application and stand rejected as follows:

(a) The double patenting rejection of Claims 1-3 and 6 over claims 11-13 of co-pending U.S. Patent Application 10/724,564 has been withdrawn by the Examiner's Answer mailed on November 1, 2007. *See* page 3, Examiner's Answer dated November 1, 2007.

(b) Claims 1-7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,140,845 to Robbins, U.S. Patent No. 5,809,664 to Legros *et al.*, "Chemical Principals" by Masterton *et al.* and "Compilation of Air Pollutant Emission Factors, AP-42" by the Environmental Protection Agency (EPA), hereinafter referred to as EPA Method AP-42. Appellant respectfully traverses this rejection and requests withdrawal of same.

(4) Status of amendments.

The '274 Application was filed on March 27, 2001. The case was appealed, with a first decision from the Board rendered on March 19, 2004, a copy of which is attached as an appendix herewith. The Board reversed the examiner's decision, and the case was sent back to the examiner for further prosecution. A first office action was then mailed on May 6, 2004, to which a response was filed and entered November 8, 2004. On February 7, 2005, a final office action was mailed, prompting a second appeal.

An Order Returning the Appeal to Examiner was issued by the Board on June 12, 2006, because the Examiner failed to properly complete the section Evidence Relied Upon in the Examiner's Answer. A non-final office action was then mailed on June 22, 2006, to which a response was filed on September 22, 2006. On November 16, 2006, a final office action was mailed, prompting this appeal. A Notice of Appeal was filed on February 16, 2007. Claims 1-7 are currently pending, of which Claims 2-7 are original (without claim amendment during prosecution). Claim 1 was amended to omit the word

"solid" as lacking proper antecedent basis in the claim language employed. Claims 8-10 have been previously cancelled.

(5) Summary of claimed subject matter.

Claims 1-7 are directed to a method for measuring volatile organic compounds in a process system having emissions.

Claim 1 is the only independent claim in the application. Claim 1 recites a "method for measuring volatile organic compounds of a material produced in a process system having emissions." The method of claim 1 comprises 3 steps, namely (a) disposing an amount of said material in an enclosed bag having a sealable opening such that there is headspace above said material in said enclosed bag; (b) storing said enclosed bag containing said material at the mean exit temperature of said emissions of said system such that equilibrium between said material and said headspace is reached; and (c) introducing samples from said headspace into a flame ionization detector which thereby measures said volatile organic compounds of said material.

Referring to the Specification as originally filed, lines 28-31 describe placing a material in an enclosed bag and storing the bag with the material at the mean exit temperature as recited in Step (b) of Claim 1 until the contents in the bag reach equilibrium. Lines 1-2 on page 2 further describe that after equilibrium has been reached, the content in the headspace of the bag may be analyzed with a flam ionization detector. Lines 5-7 on page 2 discusses that the bag may have a sealable opening and there is a headspace after the material is placed in the bag.

(6) Grounds for rejections to be reviewed on appeal.

Whether Claims 1-7 are obvious under 35 U.S.C. § 103(a) over U.S. Patent No. 5,140,845 to Robbins, U.S. Patent No. 5,809,664 to Legros *et al.*, "Chemical Principals" by Masterton *et al.* and "Compilation of Air Pollutant Emission Factors, AP-42" by the Environmental Protection Agency (EPA), hereinafter referred to as EPA Method AP-42.

(7) Arguments.

Claims 1-7 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,140,845 to Robbins, U.S. Patent No. 5,809,664 to Legros *et al.*, "Chemical Principals" by Masterton *et al.* and "Compilation of Air Pollutant Emission Factors, AP-42" by the Environmental Protection Agency (EPA), hereinafter referred to as "EPA Method AP-42." Appellant respectfully traverses the rejection because the cited references taken together do not teach or suggest Appellant's invention as claimed and one of ordinary skill in the art would not be able to modify the teachings from the prior art in order to arrive at Appellant's invention. Appellant requests withdrawal of the rejections.

The following is provided and applies to the discussion of all rejections under 35 U.S.C. § 103:

Obviousness is a question of law based on underlying factual inquiries. The factual inquiries (also known as the "Graham factual inquiries") to be performed by the Examiner are as follows:

(1) Determining the scope and content of the prior art;

(2) Ascertaining the differences between the claimed invention and the prior art; and

(3) Resolving the level of ordinary skill in the pertinent art.

Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 in View of the Supreme Court Decision in KSR International Co. v. Teleflex Inc., Federal Register, Vol. 72, No. 195, 57526-35, 57526 (October 10, 2007). Once the Graham factual inquiries are resolved, the Examiner must determine whether the claimed invention would have been obvious to one of ordinary skill in the art. Prior art is not limited just to the references being applied, but includes the understanding of one of ordinary skill in the art. Although the prior art reference (or references when combined) need not teach or suggest all the claim limitations, the Examiner must explain why the difference(s) between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art. *Id.* 57528.

The Supreme Court noted in the recent *KSR* case that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court stated that "'rejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" *KSR International Co. v. Teleflex Inc.*, 127 S. Ct. 1727 at 1741, 82 USPQ2d 1385 at 1396 (2007), quoting *In re Kahn*, 441 F.3d 977, 988 (C.A.Fed.2006). The Court also reiterated the long-held tenet against a "temptation to read into the prior art the teachings of the invention in issue" and "against slipping into the use of hindsight." Id., at 1742, quoting *Monroe Auto Equipment Co. v. Heckethorn Mfg. & Supply Co.*, 332 F.2d 406, 412 (C.A.6 1964).

Appellant's invention teaches a method for measuring volatile organic compounds (VOCs) released by material produced in a process system having emissions. Examples of process systems in which this method may be utilized are provided in Appellant's specification at least on page 4, which include spray dryers, mixers, fluid bed dryers and coolers, and storage tanks. All of these systems have dynamic air flow properties. Appellant maintains that all the claims must be read in light of the specification. Claim 1 recites the step of storing the bag **at the mean exit temperature of the emission** of the process system.

Robbins teaches a method for measuring the volatile constituent of a sample of ground water or soil mixed with water. More specifically, the leakage of underground storage tanks and the testing of the contaminated soil resulting therefrom as described in Robbins do not teach or suggest the measurement of VOCs in a process system having emission of Appellant's invention. Further, the method disclosed in Robbins does not teach or suggest storing the bag at the mean exit temperature of the emission, as taught and claimed by Appellant.

Legros *et al.* teaches a drying system for a fluid bed dryer, but fails to teach a method for measuring volatile organic compounds of material produced in a process system having emissions.

"Chemical Principals" by Masterton, Slowinski, and Stanitski is cited to establish the general principle that liquid-vapor equilibrium in a closed system may be influenced by the temperature. However, Masterton et al. does not teach or suggest the method for

measuring volatile organic compounds by storing the bag at the mean exit temperature of the emissions of the system as claimed by the Appellant.

EPA Method AP-42 is a general fact sheet compiled by the EPA on techniques used in studying air pollution. This fact sheet does not teach or suggest the instantly claimed method by storing the bag at the mean exit temperature of the emissions of the system.

Appellant recognizes that the references must be viewed as a whole in determining whether a subject invention would be obvious in light of the cited references. Not only do these individual references fail to teach or suggest all limitation of the instant claims, the references taken as a whole also fail to teach or suggest a method for measuring volatile organic compounds (VOCs) of material produced in a process system having emissions as provided by way of Appellant's invention.

Specifically, the Examiner has acknowledged that "Robbins does not expressly teach a method wherein the sampled material is stored at the mean exit temperature of said emissions of said system." Page 5, lines 12-14 of Examiner's Answer dated November 1, 2007. Legros et al. never mentions storing the bag at the mean exit temperature of said emissions of said system, which is one of the limitations of Appellant's Claim 1. Indeed, Legros et al. is cited to support the notion that a fluid bed dryer can operate up to 400 degree and is a known source of VOCs.

Even if we accept the Examiner's position that, according to Masterton et al., "at higher temperatures more vapor molecules will be present in the headspace than at lower temperatures," the cited references still lack any showing of storing the bag at the mean exit temperature of said emissions of said system. See page 6, lines 2-5 of Examiner's Answer dated November 1, 2007. Since the term "higher" is a relative term, there can be an infinite number of temperatures that are higher than a given temperature such as, for example, room temperature. Masterton et al. never teaches how hight the temperature should be, let alone a method wherein the sampled material is stored at the mean exit temperature of said emissions of said system.

EPA Method AP-42 does not cure this defect. EPA Method AP-42 teaches that the amount of vaporized VOC "depends on many variables such as tower temperature and the volatility of organics used." *See* Section 6.8.3.2 of EPA Method AP-42. Based

upon the context, the term "tower" refers to the Spray Drying Tower in Figure 6.8-2. The plain meaning of the term "tower temperature" is the internal temperature of the Spray Drying Tower. Thus, EPA Method AP-42 at most suggest using the temperature that is the same as the Tower temperature. There is therefore an important difference between the combined teachings of the cited art and the instantly claimed invention with respect to the temperature under which the bag with samples are held until an equilibrium can be reached between the sample and the headspace.

Because EPA Method AP-42 states that the amount of vaporized VOC depends on the tower temperature, one of ordinary skill in the art may reasonably conclude from reading EPA Method AP-42 that it is desirable to store the bag at the tower temperature or at least at the temperature of the site where the sample is taken. None of the references teach or suggest taking the solid sample from the emission. In fact, it is reasonable to believe that one of ordinary skill in the art would prefer to take the solid sample from the Tower or from the Conveyer as shown in Figure 6.8-2. Thus, all cited references, take together, at most teach storing the bag with samples at the same temperature as the fluid bed dryer, rather than at the mean exit temperature of the emission.

The Examiner states that "replicating the conditions of process that creates VOC-containing products; i.e., replicating the exit temperature at which VOC-containing products are manufactured or processed would allow one to determine if the process was indeed causing excessive VOCs to be released into the atmosphere." See page 7 of the Examiner's Answer dated November 1, 2007. However, replicating the conditions of a process that creates VOC-containing products does not necessarily lead to the use of the mean exit temperature of the emission from the system. Appellant does not understand how the Examiner has come to the conclusion that the temperature "at which VOC-containing products are manufactured or processed" is the same as the exit temperature of emission. Appellant maintains that the temperature "at which VOC-containing products are manufactured or processed" is more reasonably interpreted as the temperature inside the process system, such as that of the fluid bed dryer.

As the Board pointed out in the Decision issued on March 19, 2004, one of ordinary skill in the art would have reasonably inferred from Robbins that the equilibrium temperature can be the ambient temperature of the area where the materials were taken

but not the "mean exit temperature of said emissions of said system." Appellant recognizes that the other three references, namely, Legros *et al.*, Masterton et al., and EPA Method AP-42, were not before the Board in the decision issued on March 19, 2004. However, as explained above, the disclosures from Legros *et al.*, Masterton, and EPA Method AP-42 do not teach or suggest that the "mean exit temperature of said emissions of said system" is more desirable than the temperature of the area where the materials are taken, and thus do not provide any additional support to the veracity of the Examiner's position on this issue.

Even if we assume all the limitations of the appealed claims with the exception of the use of the mean exit temperature, have been taught by these individual references, there is no teaching or suggestion in the prior art or in the common knowledge at the time of Appellant's invention that would motivate one of ordinary skill in the art to modify the teachings of the prior art. As explained above, the Examiner fails to provide any reasoning as to why one of skill in the art would be motivated to use the mean exit temperature of the emissions instead of using the tower temperature.

The Examiner stated that "fluid bed dryers (from Legros et al.), drying towers, vent lines, vacuum exhausts, and waste streams are all regions within a process system whose temperature; e.g., the mean exit temperature, can be measured." See page 7 of the Examiner's Answer dated November 1, 2007. Appellant is not disputing the notion that there are more than one locations in the process system where the temperature may be measured. Merely because these temperatures are measurable does not mean that one would be motivated to use that particular temperature. As explained above, EPA Method AP-42 appears to teach storing the bag at the tower temperature. The Examiner has not established that, at the time of Appellant's invention, there was a design need or a market pressure to modify the teachings of the art by storing the bag at temperature other than the temperature where the samples are taken, as taught by the official fact sheet published by the EPA.

Indeed, Appellant observes that the Examiner has engaged in impermissible hindsight reconstruction of Appellant's invention. Effectively, the Examiner has used Appellant's invention as a "shopping list" in order to attempt to locate these various references in this attempt to negate the patentability of Appellant's invention as claimed.

More particularly, the Examiner has read into the prior art what is taught by Appellant's invention. For instance, the use of the "mean exit temperature of the emission" is borrowed from the instant application where none of the cited references use the same term or refer to the same subject matter. Neither has the Examiner articulated why one of ordinary skill in the art would prefer to use the "mean exit temperature of the emission" rather than the temperature at the site where the samples are removed.

The following commentary is provided with respect to the individual claims:

Claim 1

Claim 1 recites a method for measuring volatile organic compounds

1. A method for measuring volatile organic compounds of a material produced in a process system having emissions, said method comprising:

(a) disposing an amount of said material in an enclosed bag having a sealable opening such that there is headspace above said material in said enclosed bag;

(b) storing said enclosed bag containing said material at the mean exit temperature of said emissions of said system such that equilibrium between said material and said headspace is reached; and

(c) introducing samples from said headspace into a flame ionization detector which thereby measures said volatile organic compounds of said material.

In regard to Claim 1, the references do not teach or suggest a method employing all the elements enumerated in Claim 1.

Claims 2-7 depend from Claim 1 and benefit from like arguments as provided hereinabove. However, these Claims have additional features that patentably distinguish them over the references:

Claim 2

For example, Claim 2 depends from Claim 1 and recites a method employing a fluid bed dryer. As argued above, the references do not disclose or suggest the method of Claim 2 wherein the process system is a fluid bed dryer. Although Legros et al. mentions

a fluid bed dryer, it does not contemplate the method of measuring VOCs in such a system as presently claimed by Appellant.

Claim 3

Claim 3 depends from Claim 1, and employs a spray dryer. The references do not teach or suggest the method of Claim 3.

Claim 4

Claim 4 depends from Claim 1 and recites a storing step of from about 5 hours to about 24 hours. None of the references teach or suggest the method of Claim 4.

Claim 5

Claim 5 depends from Claim 1 and recites an amount of material of from 1 gram to about 100 grams. None of the references teach or suggest the method of Claim 5.

Claim 6

Claim 6 depends from Claim 1 and recites a storage tank for the system employed. None of the references teach or suggest the method of Claim 6.

Claim 7

Claim 7 depends from Claim 1 and recites a mean exit temperature of from about 5 to about 100 ºC. None of the references teach or suggest the temperature range recited in Claim 7.

(8) Claims appendix.

A copy of Claims 1-7 involved in this appeal is enclosed as an appendix hereto.

(9) Evidence appendix.

Not applicable.

(10) Related proceedings appendix.

Previous decision and order from the Board in this matter dated March 19, 2004 and June 12, 2006 are attached.

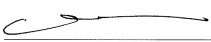
CONCLUSION

Appellant respectfully requests the Honorable Board of Appeals reverse the Examiner in the rejections of Claims 1-7 under 35 U.S.C. § 103(a). Appellant respectfully solicits allowance of Claims 1-7, all of the Claims appealed and pending in the instant application.

Other than the costs for this appeal brief, no further fees are deemed due in connection with this matter. However, the Commissioner is hereby authorized to charge any fees which may be due in this matter from Deposit Account Number 12-0600.

Respectfully submitted,

LATHROP & GAGE L.C.



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Claims Appendix

1. A method for measuring volatile organic compounds of a material produced in a process system having emissions, said method comprising:

(a) disposing an amount of said material in an enclosed bag having a sealable opening such that there is headspace above said material in said enclosed bag;

(b) storing said enclosed bag containing said material at the mean exit temperature of said emissions of said system such that equilibrium between said material and said headspace is reached; and

(c) introducing samples from said headspace into a flame ionization detector which thereby measures said volatile organic compounds of said material.

2. The method of claim 1 wherein said system is a fluid bed dryer.

3. The method of claim 1 wherein said system is a spray dryer.

4. The method of claim 1 wherein said storing step is for from about 5 hours to about 24 hours.

5. The method of claim 1 wherein said amount of said material is from about 1 gram to about 100 grams.

6. The method of claim 1 wherein said system is a storage tank.

7. The method of claim 1 wherein said mean exit temperature is from about 5°C to about 100°C.

8-10. (Cancelled).

Evidence appendix

Not applicable.

Related Proceedings Appendix

Attached is a copy of the previous Decision from the Board of Patent Appeals and Interferences dated March 19, 2004. Also attached is a copy of the previous Order by the Board of Patent Appeals and Interferences dated June 12, 2006.

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

MAILED
MAR 19 2004
U.S. PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WAYNE EDWARD BEIMESCH

Appeal No. 2004-0829
Application 09/806,274

ON BRIEF

Before GARRIS, WARREN and TIMM, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

Decision on Appeal

This is an appeal under 35 U.S.C. § 134 from the decision of the examiner finally rejecting claims 1 through 10, all of the claims in the application. Claims 1 and 8 are illustrative of the claims on appeal:

1. A method for measuring volatile organic compounds of a material produced in a process system having emissions, said method comprising:

(a) disposing an amount of said material in an enclosed bag having a sealable opening such that there is headspace above said material in said enclosed bag;

(b) storing said enclosed bag containing said solid material at the mean exit temperature of said emissions of said system such that equilibrium between said material and said headspace is reached; and

(c) introducing samples from said headspace into a flame ionization detector which thereby measures said volatile organic compounds of said material.

8. A kit for measuring the volatile organic compounds of a material produced in a process system having emissions, said kit comprising:

(a) an enclosed bag having a sealable opening to allow an amount of said material to be placed in said enclosed bag such that there is headspace above said material; and

(b) instructions for analyzing samples from said headspace in said enclosed bag, thereby providing said volatile organic compounds of said material.

Appealed claim 1 represents claims drawn to a method for measuring volatile organic compounds (VOCs) of a material produced in a process system having emissions comprising at least the steps of sealing an amount of the material in a bag such that a "headspace" remains above the enclosed sample; storing the enclosed sample to establish emission equilibrium between the material and the "headspace" at the mean exit temperature of emissions from the process system; and measuring the VOCs in the "headspace" with a flame ionization detector (FID). Appealed claim 8 represents claims drawn to a kit comprising at least a sealable bag and instructions for analyzing VOCs present in a "headspace" over material from a process system enclosed in the bag.

The references relied on by the examiner are:

Hemphill	5,140,845	Aug. 25, 1992
Robbins	4,930,906	Jun. 5, 1990

The examiner has rejected appealed claims 1 through 7 under 35 U.S.C. § 103(a) as being unpatentable over Robbins, and appealed claims 8 through 10 under 35 U.S.C. § 103(a) as being unpatentable over Hemphill.

Appellant states that "Claims 1-7 stand or fall together and Claims 8-10 stand or fall together" (brief, page 2). Thus, we decide this appeal based on appealed claims 1 and 8. 37 CFR § 1.192(c)(7) (2003).

We reverse.

Rather than reiterate the respective positions advanced by the examiner and appellant, we refer to the examiner's answer and to appellant's brief and reply brief for a complete exposition thereof.

Opinion

In order to review the examiner's application of prior art to appealed claims 1 and 8, we must first interpret the language thereof by giving the claim terms their broadest reasonable interpretation in light of the written description in the specification as it would be interpreted by one of ordinary skill in this art, *see, e.g., In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989), without reading into these claims any limitation or particular embodiment which is disclosed in the specification. *See Zletz, supra*; *In re Priest*, 582 F.2d 33, 37, 199 USPQ 11, 15 (CCPA 1978).

The claim language of appealed claim 1 at issue here is the preambular phrase "[a] method for measuring volatile organic compounds of a material produced in a process system having emissions," which method comprises at least specified steps (a) through (c). We determine that this phrase must be given weight as a claim limitation which characterizes the claimed method in order to give meaning to the claim and properly define the invention, because in the body of the claim, the language "said material"[1] in step (a), "mean exit temperature of said emissions of said system" in step (b) and "measures said volatile organic compounds of said material" in step (c) refers back to the preambular language. *See generally, In re Stencel*, 828 F.2d 751, 754-55, 4 USPQ2d 1071, 1073 (Fed. Cir. 1987).

Appellant submits that this claim language encompasses only "closed" process systems that have "VOC emissions" and not "systems open to the atmosphere," pointing out that the "process systems" at page 4, lines 26-28, of the written description in the specification, "are "closed systems, and as such have dynamic air flow properties," and that the claimed methods encompassed by claim 1 thus specify the generation and measurement of VOCs produced in a closed process system having emissions (brief, pages 2-3; reply brief, pages 2-3).

We cannot subscribe to appellant's position. We determine that the broadest reasonable interpretation of the plain language of the claim phrase taken in light of the claim language as a

[1] We address the term "a material" in the preamble of claim 1, the term "said material" in steps (a) and (c), and the term "said solid material" in step (b) with respect to compliance with 35 U.S.C. § 112, second paragraph, under *Other Issues* below.

whole and the written description in the specification, requires that the claimed method measures the VOCs of *any* "material," and thus can include liquid, paste or solid "material," as set forth in the specification (page 3, lines 3-4), which is "produced in" *any* "process system," open or closed, "having emissions," that can be VOC emissions, wherein the "material" produced in the process system can contain VOCs. Thus, "a material" can include any intermediate or final "product" that is produced by "a process system having emissions," including materials that are VOCs *per se*. However, while the "process system" can be open or closed, it must be one in which "the mean exit temperature of said emissions of said system" can be determined in order to establish the temperature at which the "enclosed bag containing said material" is stored so that "equilibrium between said material and said headspace is reached" as specified in appealed claim 1.

Indeed, we find *no* requirement in the claim language as a whole or in the written description in the specification, that "a process system" must be a "closed system" as appellant contends. We determine that one of ordinary skill in this art would recognize that the "[e]xemplary process systems" at page 4, lines 26-28, of the written description in the specification, can be "open systems," that is, systems open to the atmosphere, wherein VOCs emitted by such systems can be monitored with respect to amount and temperature as they exit the system to the atmosphere, and wherein the amount of VOC "emissions" from the "process system" has no relationship to the amount of VOCs in the intermediate or final "product" even at the "mean exit temperature of said emissions of said system." We further find no explanation in the written description in the specification why one of ordinary skill in this art would consider "storage tanks," which can be vented to the atmosphere even when the "product" therein contains VOCs, to be an example of "a process system." We note here that we find no support for appellant's position in specification Example I wherein samples of detergent particles are "taken at the *inlet* of the dryer" (specification, page 3; emphasis supplied) and thus, the measurement of the VOCs in this *starting material* does not constitute "measuring volatile organic compounds of *a material produced* in a process system having emissions" as required by appealed claim 1. In any event, limitations from an embodiment cannot be read into a claim unless there is basis in the claim language as a whole or in the written description in the specification to do so.

Considering now the ground of rejection of appealed claim 1 under § 103(a) over Robbins, it is well settled that in order to establish a *prima facie* case of obviousness, the examiner must show that some objective teaching, suggestion or motivation in the applied prior art taken as a whole and/or knowledge generally available to one of ordinary skill in this art would have led that person to the claimed invention as a whole, including each and every limitation of the claim arrange as required by the claim, without recourse to the teachings in appellant's disclosure. *See generally, In re Rouffet*, 149 F.3d 1350, 1358, 47 USPQ2d 1453, 1458 (Fed. Cir. 1998); *Pro-Mold and Tool Co. v. Great Lakes Plastics Inc.*, 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1629-30 (Fed. Cir. 1996); *In re Fine*, 837 F.2d 1071, 1074-76, 5 USPQ2d 1596, 1598-1600 (Fed. Cir. 1988); *In re Dow Chem. Co.*, 837 F.2d 469, 473, 5 USPQ2d 1529, 1531-32 (Fed. Cir. 1988).

We agree with appellant that the examiner has not logically established a *prima facie* case of obviousness of the claimed method encompassed by appealed claim 1 as we have interpreted this claim above. We find that Robbins acknowledges that the so-called "[h]eadspace sampling techniques" for testing "a consistent volume or weight of ground water or soil mixed with water in a container, sealing the container, agitating, allowing time to permit volatile constituents to be released into the air headspace of the container, and then using a detector to measure the volatile constituent in the headspace" as applied to leakage of material around "storage tanks" was known (col. 1. lines 48-58), and discloses improvements on that process with respect to leakage from "storage tanks," including the use of FID to measure the VOCs in the water and/or soil and water material (e.g., cols. 1-2). However, we determine that the examiner has not provided scientific argument or objective evidence establishing that one of ordinary skill in this art would have adapted the "headspace" method for measuring VOCs in ground water and water and soil samples from areas around "storage tanks" as taught by Robbins, to a "material produced by a process system having [VOC] emissions" using "the mean exit temperature of said emissions of said system" to establish "equilibrium between said material and said headspace" as required by appealed claim 1.

While Robbins recognizes the effect of temperature with respect to "an equilibrium concentration" in the "headspace" at col. 5, lines 1-6, as the examiner points out (answer,

page 3), the examiner has not established why one of ordinary skill in this art would have found in this disclosure the objective teaching, suggestion or motivation to use "the mean exit temperature of said emissions of said system" used to prepare "a material" to obtain "headspace" equilibrium concentration of the enclosed "material." Indeed, one of ordinary skill in this art would have reasonably inferred from Robbins that the equilibrium temperature can be the ambient temperature of the area around the "storage tanks" where the ground water or soil mixed with water was taken, or lab room temperature,[2] and not that "the mean exit temperature of said emissions of said system" used to produce "a material" is a result effective variable to determine the VOCs content of that product "material." *See In re Antonie*, 559 F.2d 618, 619-20, 195 USPQ 6, 8-9 (CCPA 1977); *see also Dow Chem., supra.*

Accordingly, in the absence of a *prima facie* case of obviousness, we reverse the ground of rejection.

The claim language of appealed claim 8 plainly specifies a kit comprising at least "an enclosed bag having a sealable opening to allow an amount of said material to be placed . . . [therein] such that there is headspace above said material," and "instructions for analyzing samples from said headspace in said enclosed bag thereby providing said volatile organic compounds of said material" for use in the method "for measuring volatile organic compounds of a material produced in a process system having emissions" as set forth in the preamble. Contrary to the examiner's interpretation (answer, page 5), we are of the opinion that the preambular language must be given weight as a claim limitation which characterizes the claimed kit with respect to the "instructions" contained therein as set forth in the body of the claim. *See generally, Stencel, supra.*

In considering the patentability of appealed claim 8 with respect to the Hemphill under § 103(a), the printed matter "instructions" must be taken into account to determine "whether there exists any new and unobvious functional relationship between the printed matter and the

[2] It is well settled that a reference stands for all of the specific teachings thereof as well as the inferences one of ordinary skill in this art would have reasonably been expected to draw therefrom, see *In re Fritch*, 972 F.2d 1260, 1264-65, 23 USPQ2d 1780, 1782-83 (Fed. Cir. 1992); *In re Preda*, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968), presuming skill on the part of this person. *In re Sovish*, 769 F.2d 738, 743, 226 USPQ 771, 774 (Fed. Cir. 1985).

substrate." *In re Gulack*, 703 F.2d 1381, 1385-86, 217 USPQ 401, 404 (Fed. Cir. 1983). "Where the printed matter is not functionally related to the substrate, the printed matter will not distinguish the invention from the prior art in terms of patentability." *Id.*, 703 F.2d at 1385, 217 USPQ at 404. "What is required is the existence of *differences* between the appealed claims and the prior art sufficient to establish patentability." *Id.*, 703 F.2d at 1385, 217 USPQ at 404. "As part of its burden to establish a prima facie case of obviousness, *see In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992), the burden of establishing the absence of a novel, nonobvious functional relationship rests with the PTO." *In re Lowry*, 32 F.3d 1579, 32 USPQ2d 1031 (Fed. Cir. 1994) ("The PTO did not establish that the ADOs, within the context of the entire claims, lack a new and nonobvious functional relationship with the memory.").

The examiner does not give the preambular language "any patentable weight," interpreting the method specified therein to be an "intended use, that being for holding VOC-containing material from a process system" (answer, page 5). Thus, the examiner finds that appealed claim 8 is "anticipated by the device of Hemphill where a resealable bag (reference item 10) has instructions (references items 18 and 20)," and holds that one of ordinary skill in the art would have been "motivated to ensure that appropriate instructions related to the intended use of the bag would be included as a matter of design choice" (*id.*, pages 5-6). Appellant points out that "Hemphill teaches a cooking grease disposal bag" and thus, "does not teach or suggest a kit for measuring volatile organic compounds produced in a process system having emissions as" claimed, thus arguing that a *prima facie* case of obviousness has not been established (brief, page 4, original emphasis deleted; *see also* reply brief, page 4). The examiner responds that it is not disputed that the "bag of Hemphill has the inherent capability to store VOC-containing material," and that "Hemphill need not suggest or otherwise indicate that their bag can be used for storing VOC-containing material from a process system" (answer, page 9).

We find that Hemphill teaches a bag which when folded at one or more of lines **14**, **15** or **19** and temporarily or permanently sealed according to the instructions printed at **18** and **20**, and filled with "grease" accordingly, will provide a "headspace" above the "grease" material contained therein as shown in specifications **Figs. 1** through **4** (*see, e.g.*, cols. 3-4), and thus

agree with the examiner's findings with respect to this reference. However, what is missing from the examiner's analysis is consideration of whether there is no new and unobvious functional relationship between the printed matter "instructions" and the sealable bag of Hemphill which contains no instructions thereon, and indeed, there is no disclosure in this reference, with respect to "instructions" concerning the use of the bag in the specified "process." Accordingly, in the absence of such analysis we find that the examiner has not established a *prima facie* case of obviousness, and therefore, we reverse this ground of rejection.

The examiner's decision is reversed .

Other Issues

We decline to exercise our authority under 37 CFR § 1.196(b) (2003) and enter on the record new grounds of rejection of the appealed claims with respect to following matters, and instead suggest that the examiner consider the following upon any further prosecution of the appealed claims subsequent to the termination of this appeal, supplying the record with any additional prior art as necessary in these respects.

The term "a material" in the preamble of appealed claim 1 and the term "said material" in the first specified step of the process method claimed therein which refers back to the former term, is not limited to "said solid material" set forth in the second specified step of the claimed process which must refer back to "said material." Indeed, we find no claim language or disclosure in the written description in appellant's specification as it would be interpreted by one of ordinary skill in this art, *see Morris*, *supra*; *Zletz*, *supra*, which limits the term "a material" in the preamble to a "solid material," and indeed, appellant states in the specification that "[a]s used herein, the 'material' for which the VOCs are required can be a liquid, paste or solid" (page 3, lines 3-4). Thus, it would appear that, *prima facie*, appealed claims 1 through 8 in fact fail to set out and circumscribe a particular area with a reasonable degree of precision and particularity as required by this statutory provision, in view of the use of the terms "a material" and "said solid material" in appealed claim 1 which are of different scope. *In re Moore*, 439 F.2d 1232, 1235, 169 USPQ 236, 238 (CCPA 1971).

With respect to appealed claims 1 and 8, it reasonably appears from the prior art acknowledged in col. 1 of Robbins that there is other prior art relevant to "headspace sampling techniques."

Finally, with respect to appealed claim 8, the examiner should consider the disclosure in Robbins of instructions to place a material that can contain VOCs in a sealable bag in a manner to leave a "headspace" for sampling purposes (cols. 1-6), either alone or with respect to Hemphill and/or other prior art.

REVERSED

BRADLEY R. GARRIS)
Administrative Patent Judge)
)
)
CHARLES F. WARREN) BOARD OF PATENT
Administrative Patent Judge) APPEALS AND
) INTERFERENCES
)
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

MAILED
JUN 12 2006
U.S. PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte: WAYNE EDWARD BEIMESCG

Application No. 09/806,274

ORDER RETURNING UNDOCKETED APPEAL TO EXAMINER

This application was electronically received at the Board of Patent Appeals and Interferences on June 7, 2006. A review of the application has revealed that the application is not ready for review and consideration. Accordingly, the application is herewith being returned to the examiner. The matters requiring attention prior to docketing are identified below.

EXAMINER'S ANSWER

On December 9, 2005, an Examiner's Answer was mailed in response to the Appeal Brief received November 4, 2005. A review of the Examiner's Answer reveals that it is not in compliance with the Manual of Patent Examining Procedure (MPEP). In the "Evidence Relied Upon" (section 8), the Examiner states: "That no evidence is relied upon by the examiner in the rejection of the claims on appeal." However, the MPEP §1207.02 states that the "Evidence

Relied Upon" section must include:

(8) Evidence Relied Upon

A listing of evidence relied on (e.g., patents, publications, admitted prior art), and in the case of non-patent references, the relevant page or pages.

Correction of the record is required.

CONCLUSION

Accordingly, it is

ORDERED that the application is returned to the examiner to:

1) vacate the Examiner's Answer mailed December 9, 2005;

2) issue a revised Examiner's Answer to include all required headings as set forth under 37 CFR § 41.37, and

3) for such further action as may be appropriate.

BOARD OF PATENT APPEALS
AND INTERFERENCES

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